Retyped amended claim set
10/510383
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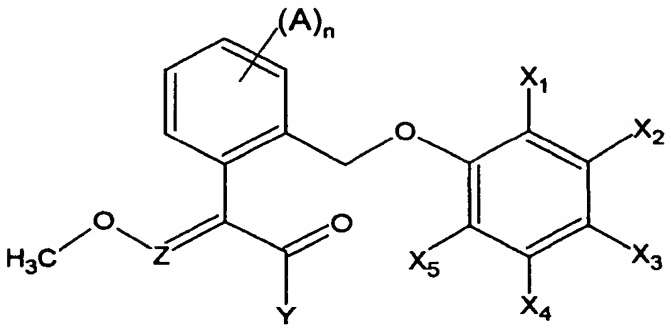
CLAIMS

1. Compounds having general formula (I)



(I)

wherein:

- X_1 represents a hydrogen atom;
- X_2 represents a halogen atom or an R group;
- X_3 represents an R group when X_2 = halogen, or represents a halogen atom when X_2 = R;
- X_4 represents a halogen atom when X_3 = R, or represents a hydrogen atom when X_2 = R;
- X_5 represents a hydrogen atom when X_3 = R, or represents a halogen atom when X_2 = R;
- R represents a C_1-C_{12} alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C_1-C_6 alkoxy groups optionally halogenated, C_2-C_{10} alkoxyalkoxy groups optionally halogenated, C_3-C_{12} trialkyl silyl groups; a C_2-C_{12} alkenyloxy or alkenylthio group optionally substituted by halogen atoms; a C_3-C_{12} alkynyloxy or alkynylthio group; a linear or branched C_3-C_{12} alkoxyimi-

noalkylidenoxy or alkoxyiminoalkylidenthio group; a C_3-C_8 cycloalkoxy group optionally substituted by halogen atoms, C_1-C_6 alkyl or haloalkyl groups; a C_4-C_{12} cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl or haloalkyl groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C_1-C_6)alkoxy, aryl-(C_1-C_6)alkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups;

- A represents a halogen atom or a C_1-C_4 alkyl, haloalkyl, alkoxy, haloalkoxy group, groups A being the same or different when n is greater than or equal to 2;
- Y represents an OCH_3 group or an $NHCH_3$ group;
- Z represents a CH group or a nitrogen atom N when Y = OCH_3, a nitrogen atom N when Y = $NHCH_3$;
- n is an integer ranging from 0 to 4.

2. The compounds according to claim 1, characterized in that they are an isomeric mixture in any proportion, or the isomer E or the isomer Z of the compounds having formula (I).

3. The compounds according to claim 1, characterized in that they are the isomer E of the compounds having formula (I).

4. The compounds according to claim 1, characterized in

that X_3 represents an R group according to the above mentioned meanings, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0.

5. The compounds according to claim 1, characterized in that they are selected from:

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;
- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate;
- (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate;
- (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;
- (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-

trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxy-acrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyimino-acetamide;

- methyl (*E*)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-methylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;

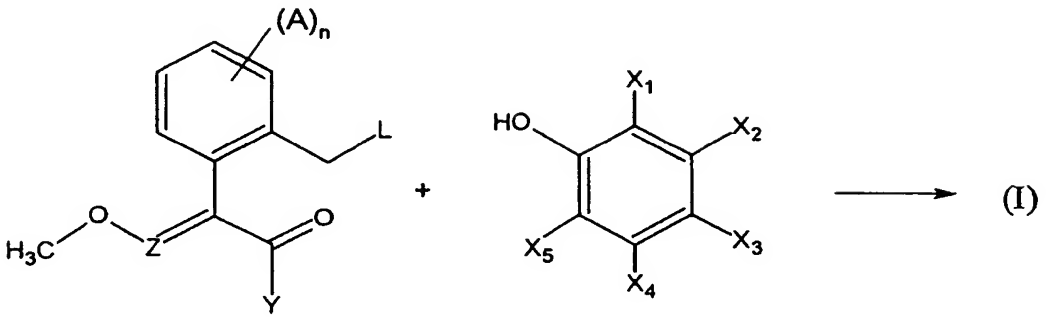
- methyl (*E*)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;

- methyl (*E*)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate.

6. The process for the preparation of the compounds having general formula (I), according to any of the claims 1-5, characterized in that it includes a condensation reaction of a compound having general formula (II) with a phenol having general formula (III), according to

the reaction scheme 1:

Scheme 1



(II) (III) (I)

wherein , X_1, X_2, X_3, X_4, X_5, A, Y, Z and n have the meanings defined above, L represents a leaving group such as a chlorine atom, a bromine atom or a $R_LSO_3^-$ group wherein R_L represents a C_1-C_6 alkyl or haloalkyl, or a phenyl optionally substituted.

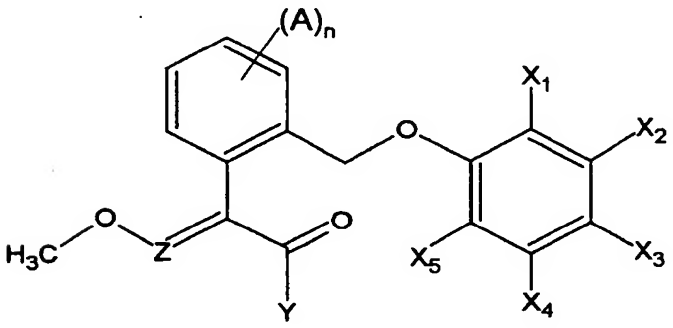
7. The process according to claim 6, characterized in that the reaction is carried out in an inert organic solvent, at a temperature ranging from 0°C and the boiling temperature of the reaction mixture, possibly in the presence of an inorganic or organic base.

8. The process according to claim 7, characterized in that the solvent is selected from alcohols, ethers, esters, ketones, chlorinated hydrocarbons, aromatic hydrocarbons, aliphatic hydrocarbons, aprotic dipolar solvents.

9. The process according to claim 7, characterized in that the inorganic base is selected from hydrides, hydroxides, carbonates of alkaline or alkaline-earth metals.

10. The process according to claim 7, characterized in that the organic base is selected from pyridine, dimethylaminopyridine, aliphatic amines, cyclic amines, alcoholates of alkaline metals.

11. Use of the compounds having general formula (I)



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wherein:

- X_1 represents a hydrogen atom;
- X_2 represents a halogen atom or an R group;
- X_3 represents an R group when X_2 = halogen, or represents a halogen atom when X_2 = R;
- X_4 represents a halogen atom when X_3 = R, or represents a hydrogen atom when X_2 = R;
- X_5 represents a hydrogen atom when X_3 = R, or represents a halogen atom when X_2 = R;

- R represents a C_1-C_{12} alkoxy or alkylthio group optionally substituted by halogen atoms, cyano groups, C_1-C_6 alkoxy groups optionally halogenated, C_2-C_{10} alkoxyalkoxy groups optionally halogenated, C_3-C_{12} trialkyl silyl groups; a C_2-C_{12} alkenyloxy or alkenylthio group optionally substituted by halogen atoms; a C_3-C_{12} alkynyloxy or alkynylthio group; a linear or branched C_3-C_{12} alkoxyiminoalkylidenoxy or alkoxyiminoalkylidenthio group; a C_3-C_8 cycloalkoxy group optionally substituted by halogen atoms, C_1-C_6 alkyl or haloalkyl groups; a C_4-C_{12} cycloalkylalkoxy or cycloalkylalkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl or haloalkyl groups; an aryloxy, arylthio, heteroaryloxy, heteroarylthio, aryl-(C_1- C_6)alkoxy, aryl-(C_1-C_6)alkylthio group optionally substituted by halogen atoms, C_1-C_6 alkyl groups optionally halogenated, C_1-C_6 alkoxy groups optionally halogenated, nitro groups, cyano groups;

- A represents a halogen atom or a C_1-C_4 alkyl, haloalkyl, alkoxy, haloalkoxy group, groups A being the same or different when n is greater than or equal to 2;

- Y represents an OCH_3 group or an $NHCH_3$ group;

- Z represents a CH group or a nitrogen atom N when Y = OCH_3, a nitrogen atom N when Y = $NHCH_3$;

- n is an integer ranging from 0 to 4;

as acaricides and/or insecticides and/or fungicides.

12. The use according to claim 11 of the isomers E of the compounds having formula (I).

13. The use according to claim 11, wherein X_3 represents an R group according to the above meanings, X_2 and X_4 represent a halogen atom, X_1 and X_5 represent a hydrogen atom and n is equal to 0.

14. The use according to claim 11, wherein the compounds of formula (I) are selected from:

- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;
- methyl (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-2-methoxyiminoacetate;
- (*E*)-2-[2-(4-cyclopropylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorophenoxymethyl]phenyl}-2-methoxyiminoacetate;
- (*E*)-2-{2-[4-(2,2-dichlorocyclopropyl)methoxy-3,5-dichlorphenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;

- (*E*)-2-{2-[3,5-dichloro-4-(3,3-dichloroprop-2-enyloxy)-phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-2-methoxyiminoacetate;
- (*E*)-2-{2-[3,5-dichloro-4-(3-chloro-4,4,4-trifluorobut-2-enyloxy)phenoxymethyl]phenyl}-N-methyl-2-methoxyiminoacetamide;
- methyl (*E*)-2-[2-(4-cyclobutylmethoxy-3,5-dichlorophenoxymethyl)phenyl]-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3,3-dimethylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(3-methylbutoxy) phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-[2-(4-cyclohexylmethoxy-3,5-dichlorophenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(2,4-dichlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate;
- methyl (*E*)-2-{2-[3,5-dichloro-4-(4-chlorobenzyloxy)phenoxymethyl]phenyl}-3-methoxyacrylate.

15. The use according to any of the claims 11-14 for the control of adults, larvae and eggs of mites and insects

which are harmful in the agrarian, civil and zoo-technical field.

16. The use according to claim 15, wherein the harmful mites and/or insects are tetranychidae (*Tetranychus urticae, Tetranychus telarius, Tetranychus cinnabarinus, Eotetranychus carpini, Panonychus ulmi, Panonychus citri*), eriophyidae (*Phytoptus avellanae, Eriophyes vitis, Eriophyes piri*) tarsonemidae (*Steneotarsonemus pallidus*), hemiptera (*Macrosiphum euphorbiae, Aphis fabae, Myzus persicae*), lepidoptera (Spodoptera spp., Heliothis spp., Chilo spp., *Carpocapsa pomonella*), coleoptera (*Leptinotarsa decemlineata, Phaedon cochleariae*), diptera (Aedes spp., Culex spp., Musca spp.).

17. The use according to any of the claims 11-14 for the control of phytopathogenous fungi such as: Helminthosporium spp., Erysiphe spp., Puccinia spp., *Plasmopara viticola,* Pythium spp., Phytophthora spp., Rhynchosporium spp., Septoria spp., *Sphaerotheca fuliginea, Podosphaera leucotricha, Pyricularia oryzae, Uncinula necator,* Venturia spp., *Botrytis cinerea,* Fusarium spp., Alternaria spp., Cercospora spp.

18. The use according to any of the claims 11-14 for the control of mites, insects and fungi which are harmful in crops of agrarian and horticultural interest, on domestic and breeding animals, in environments frequented by human

beings.

19. A method for controlling mites and/or insects and/or phytopathogenous fungi in crops of agrarian and horticultural interest, and/or on domestic and breeding animals, and/or in environments frequented by human beings, by the application of the compounds having general formula (I) according to one of the claims 1-5.

20. The method according to claim 19, characterized in that the quantity of compound to be applied varies from 10 g to 5 kg per hectare.

21. Acaricidal and/or insecticidal and/or fungicidal compositions containing as active principle one or more compounds having general formula (I) according to one of the claims 1-5.

22. The compositions according to claim 21, comprising other active principles compatible with the compounds having general formula (I), such as other acaricides/insecticides, fungicides, phyto-regulators, antibiotics, herbicides, fertilizers.

23. The compositions according to claim 21, characterized in that the concentration of active principle ranges from 1 to 90%, preferably from 5 to 50%.